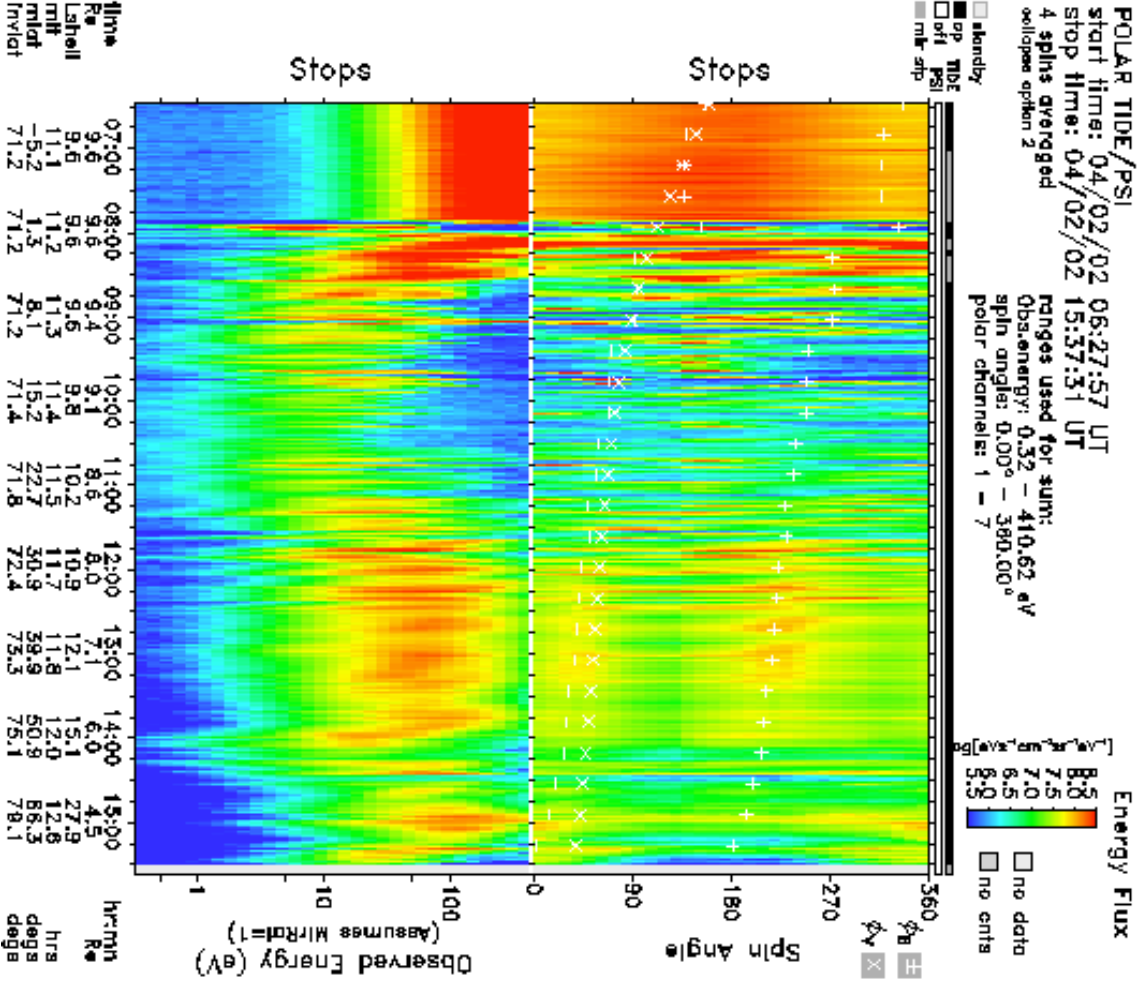


Ionospheric Plasma at Magnetopause



- Polar now crossing the magnetopause frequently
- Example:
 - 0630-0745: magnetosheath
 - 0745-0800: brief crossing
 - 0800-0900: decreasing energy, supersonic plasma waves or vortexes, ionospheric composition.
 - 0900-1100: continued sloshing, waves or vortexes
 - 1130-1400: counter-streaming ionospheric flows
- Ionospheric plasma dominates density just inside magnetopause in most cases.
- Geopause \approx Magnetopause



TIMAS View of GeoMagnetopause



- TIMAS sees higher energy parts of same features.
- Low O^+ content in plasma immediately inside MP suggests plasmaspheric plume source.
- Field alignment outflow signature is extreme at these energies after 1130UT.
- Very little hot plasma present for this event.
- This is **not** what we expect from current theory and simulation models.

